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July 28, 1997

Inquiry Proposal to CALFED Program

I1-089

Project Title and Applicant Name

- WATER QUALITY OBJECTIVES FOR DIAZINON AND CHLORPYRIFOS
- STATE WATER RESOURCES CONTROL BOARD

Project Description and Primary Biological/Ecological Objectives

The proposed project would develop water quality objectives for diazinon and chlorpyrifos, two pesticides found in waters of six Regional Water Quality Control Boards (RWQCBs), including two in the CALFED study area (Central Valley RWQCB and San Francisco Bay RWQCB).

Since the 1980s, tests of Sacramento and San Joaquin River water by the Central Valley RWQCB and SWRCB have shown the water to be periodically acutely toxic to standard aquatic test organisms from both chemicals. Literature surveys suggest that the same river water may also be toxic to some resident organisms, especially sensitive young life stages. Water quality objectives for diazinon and chlorpyrifos will provide necessary targets for agricultural and urban Best Management Practices (BMPs) to help assure that resident aquatic life will be protected from these chemicals in water.

Approach/Tasks/Schedule

The proposed project would accomplish the following: (1) identify aquatic organisms in the CALFED study area which are exposed to diazinon and chlorpyrifos and which could be used as representative test organisms for the ecosystem; (2) develop or refine chronic toxicity tests for the use of these species in the laboratory; and (3) develop statewide water quality objectives i.e., safe levels for the two pesticides. This work is designed to be complementary to the projects proposed by the Department of Pesticide Regulation (DPR) for CALFED funding.

Justification for Project and Funding by CALFED

The following recommendation was addressed to the State Water Resources Control Board (SWRCB) by the Chemical Specific Objectives Task Force, one of eight task forces convened by the SWRCB to provide recommendations for consideration as the SWRCB develops the Inland Surface Waters Plan and the Enclosed Bays and Estuaries Plan:

"Water quality objectives should be developed as soon as possible for the following pesticides: diazinon, carbofuran, malathion, and chlorpyrifos because monitoring studies have demonstrated that these pesticides have a high potential for adversely affecting beneficial uses in several important watersheds in California." (Reports of the Public Advisory Task Forces to the SWRCB, October 1995).

The CALFED Water Quality Technical Group has listed diazinon and chlorpyrifos as "parameters of concern." (CALFED Approach to Impact Analysis Workshop. Workshop Information Packet, p. 15, April 29, 1997).

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The June 5, 1997 CALFED Summary of Technical Term Reports. Stressors and Examples of Restoration Actions identified acute and chronic toxicity caused by agricultural runoff (and other sources) as examples of stressors needing remedial action. Restoration Action examples included (1) establishing the aquatic ecosystem significance of pesticides draining into the Sacramento and San Joaquin Rivers and the Delta, and (2) undertaking actions to prevent, treat, or otherwise reduce the impacts.

In addition, the San Francisco Estuary Project stated its 1993 Comprehensive Conservation and Management Plan that Water Quality Control Plans should contain numerical water quality objectives for all pesticides detected in the Estuary (Action PO-1.6: Develop a comprehensive strategy to reduce pesticides coming into the Estuary).

The Department of Fish and Game (DFG) has recommended that data from chronic toxicity tests, particularly for resident species, are needed for developing water quality criteria and more meaningful hazard assessments (DFG hazard assessments for chlorpyrifos and diazinon, 1994, Administrative Reports 94-1 and 94-2).

Budget Costs and Third Party Impacts

The total project budget is $410,000. This includes $150,000 to support 1.5 PY at the SWRCB (0.5 PY each of the three years), and $260,000 for development of laboratory test species and recommended water quality objectives.

No third party impacts are anticipated.

Applicant Qualifications

The proposed project will be managed by SWRCB Division of Water Quality staff. The SWRCB has considerable experience in managing technical contracts it has awarded to other government institutions, universities, and private consultants. This experience will be necessary to ensure that a high quality product will be delivered on schedule. Subcontractors will be selected based on their demonstrated ability to meet strict project requirements.

Monitoring and Data Evaluation

Monitoring and data evaluation are activities that would take place after diazinon and chlorpyrifos water quality objectives are in place. The objectives are benchmarks against which the progress of BMPs can be measured.

Local Support/Coordination with other Programs/Compatibility with CALFED objectives

Internally, the SWRCB project manager will develop the project in coordination with watershed management, nonpoint source, technical support and standards development staff. External coordination will occur with the DFG, DPR, U.S. Geological Survey, U.S. Fish and Wildlife Service, Central Valley RWQCB and San Francisco Bay RWQCB.

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